IEI Integration Corp.

Ready For ODM

ITDB-100L 2D Barcode Reader

Self-developed symbology decoding algorithm

The IEI self-developed algorithm for barcode readers can accurately decode 1D and 2D barcodes even when a barcode signal is corrupted by noise or is severely blurred. Custom algorithm development solutions are now available.

Read All Codes With Speed and Accuracy

The ITDB-100L is able to provide high-speed decode and robust decode for common distortion, which is more suitable for industrial purpose such as high-speed production line.

Wide Decoding Range

The ITDB-100L is able to read symbols with the maximum size of 1.2” (30 mm) square and minimum reading distance of 2” (50 mm) with diffractive field illumination. In addition, it provides wide range decoding from 2” (50 mm) to 13” (330 mm).

ESD Safe Design

When selecting a barcode reader, careful consideration should be made to ensure that it will not cause additional risk for ESD events especially in printed circuit boards, integrated circuits, and other electrically sensitive components. The ITDB-100L is rated for discharges up to 8kV for maximum ESD safety.

Pharmaceuticals

The ITDB-100L 2D barcode readers provide accurate reading of multiple code formats in a single view.

Packaging

The ITDB-100L 2D barcode readers are ideally suited for to a wide range of packaging applications.

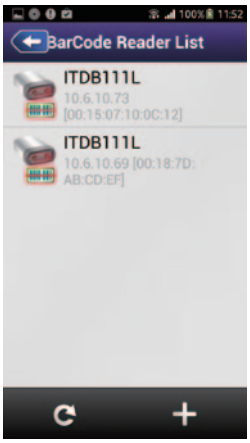
Document Handling and Sorting

The ITDB-100L 2D barcode readers are perfect for sorting documents, envelopes, and more.

www.ieiworld.com

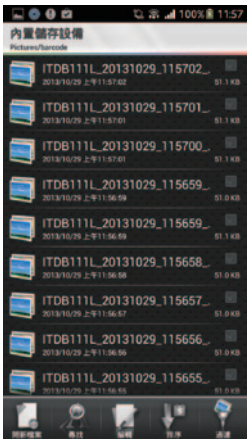
IEI Barcode Solution

IEI barcode quick-setup solution allows you to easily and quickly setup your ITDB series barcode reader through an Android phone or tablet that has IEI barcode reader APK installed.



Select an ITDB device

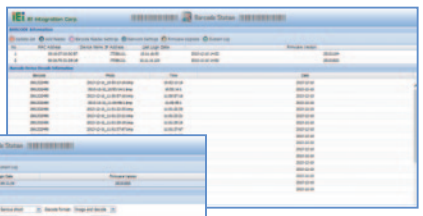
Quick setup & ready to decode



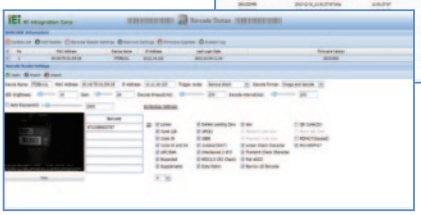
Can't decode? Report IEI with the saved image

Scan this code with your phone to go to the Android Market and download the app for **FREE.**

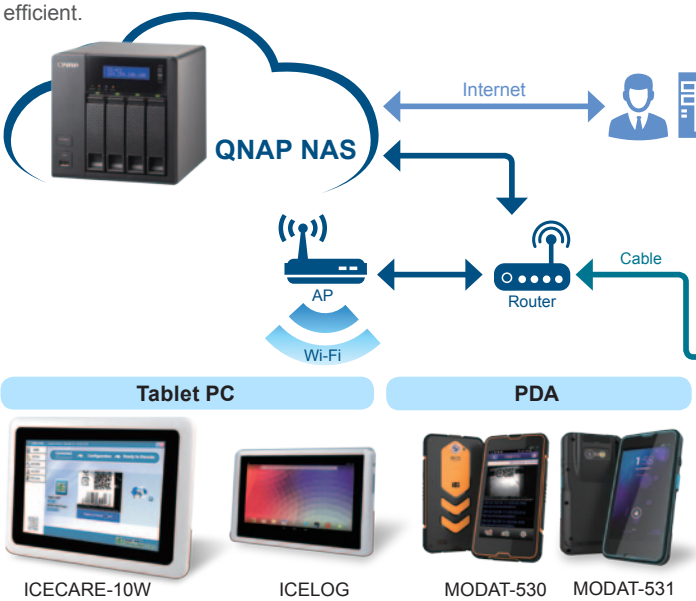
IEI barcode solution allows you to manage your production lines installed with ITDB series barcode reader with QNAP NAS systems. With the TCP interface supported by the ITDB series, the information can be instantly transmitted to the NAS system making real-time production line monitoring more efficient.



Real-time production line status monitoring



ITDB barcode reader management



ITDB-100L
2D Barcode Reader

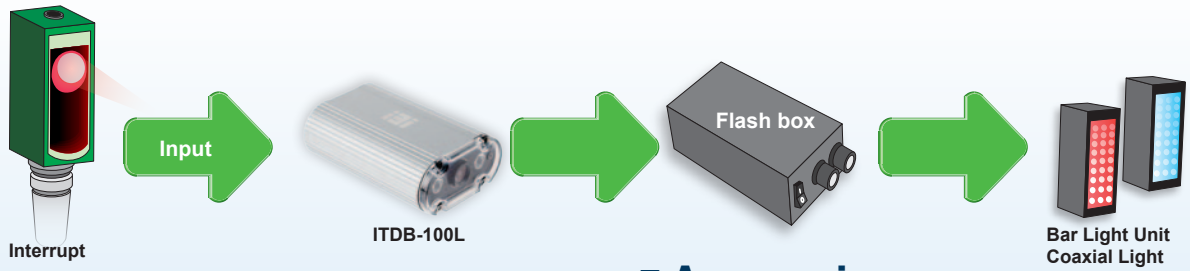
IEI offers a barcode verifier software for Windows systems which is used to guarantee that the barcodes you print are 100% compliant to the ITDB barcode reader. Verification is akin to insurance: you hope you'll never need it but it's risky to function without it.

Barcode reader configuration

Barcode verification

Digital Input and Output Connection

The ITDB digital input and output ports enable connection to external devices, such as detectors (e.g. proximity and photoelectric sensors), flash power controller box and lights (e.g. bar and coaxial light). When input and output mechanisms are connected, you can manually or automatically request through the ITDB management software either from a remote PC, android phone or tablet, QNAP NAS or using the ITDB's built-in logic.



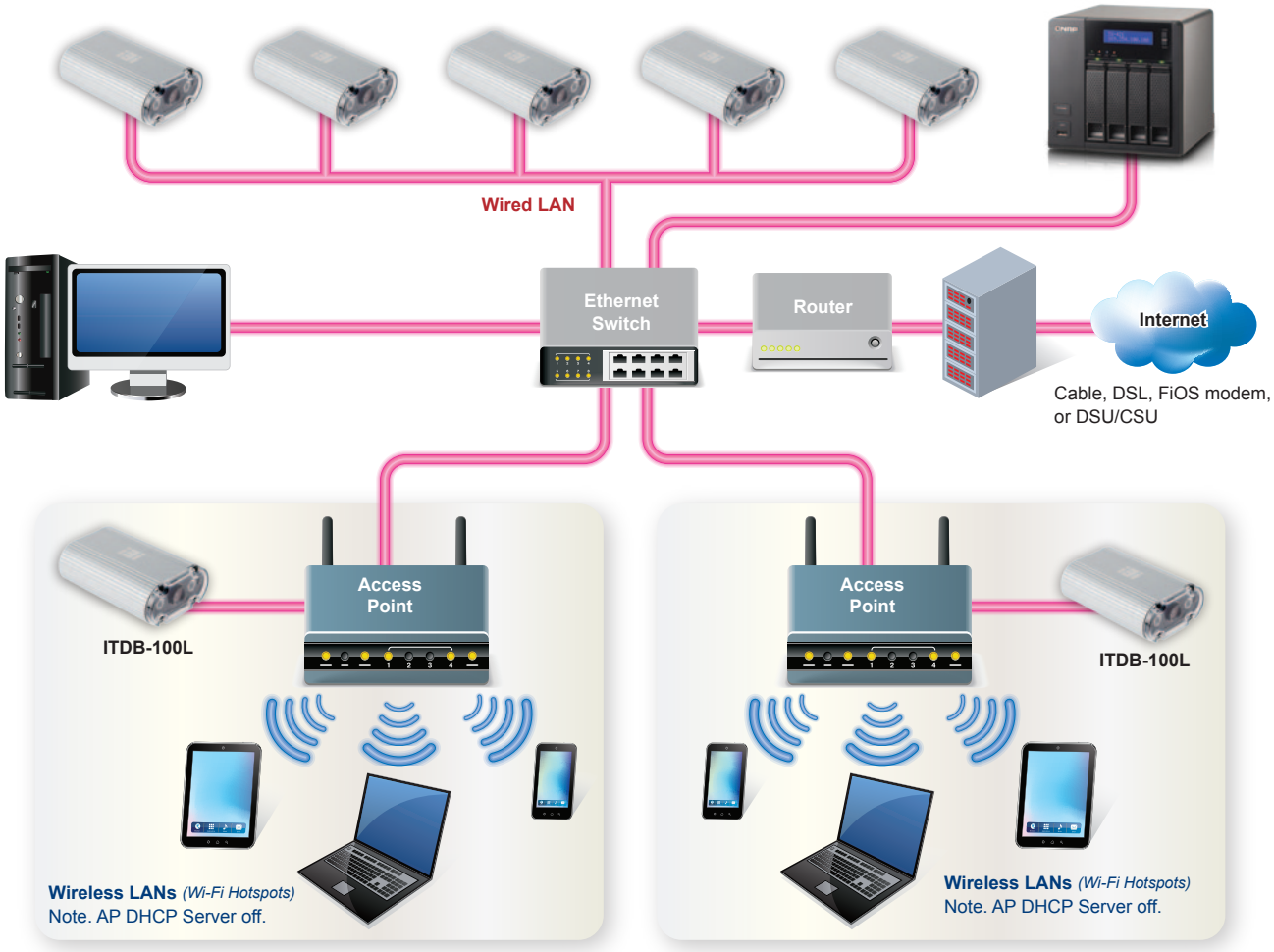
✱ I/O usage example: An ITDB attached to a photoelectric sensor and to a flash power controller system.

■ Accessories

- External Lighting
  - » Bar Light Unit
  - » Coaxial Light
- Power Controller Box
- Trigger Sensors
  - » Proximity sensor
  - » Photoelectric sensor

Multi-port Connection

An ITDB system that runs over an IP network infrastructure enables the decode images and results to be distributed to any number of sites (e.g. QNAP NAS, Android tablet or phone and Windows PC), within the constraints of available bandwidth.



✱ Multi-port connection example: An ITDB manager solution using an Intelligent IP infrastructure as a transport.

ITDB Control Platform:

- Windows® XP/Vista/7 x86 & x64
- Android OS 4.1.2 or above
- QNAP NAS

Features

- **Support remote monitoring and control via Android phones and tablets**
- **Connection I/O interface: USB, Ethernet TCP/IP**
- **Image Display:** Capture / Preview
- **Trigger Modes:**
  » One shot / Series Shot / Continuous / Batch / Manual
- **CMOS Sensor Configuration:**
  » Automatic / Manual Exposure
  » Gain
- **Image Format:** Raw / BMP / JPG
- **Region of Interest setting**
- **Firmware upgradable via USB / Ethernet**
- **Other Configurations:**
  » Target Brightness / Illumination / Decode Timeout / Decode Interval

ITDB-100L
2D barcode reader

Successful Product Features

■ Ease of Connectivity

Popular interfaces are on board:
USB, Ethernet TCP/IP

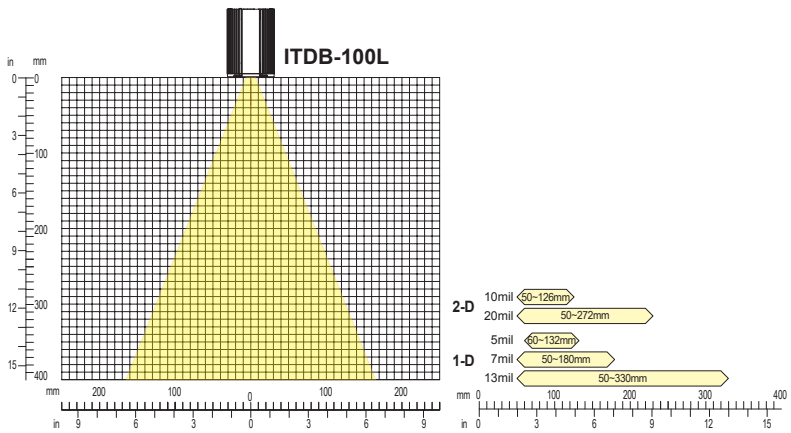
■ Easy to Read

Multiple focal options provide application-specific scanning, leading to improved productivity

■ Decode Range

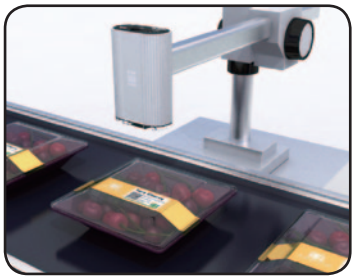
Typical Performance*	ITDB-100L-R10
5 mil Code 39	60 mm - 132 mm
7 mil Code 39	50 mm - 180 mm
13 mil UPC	50 mm - 330 mm
10 mil Data Matrix	50 mm - 126 mm
20 mil QR	50 mm - 272 mm

* Performance may be impacted by barcode quality and environmental conditions



■ Supported Barcode Types

Linear					
Codabar (NW7)		Code 128		Code 39	
Code 93 and 93i		Interleaved 2 of 5		MSI (1/2 CRC check)	
UPC		ISBN		EAN	
Stacked					
PDF417		MicroPDF417			
Matrix					
Data Matrix		QR Code		Micro QR code	

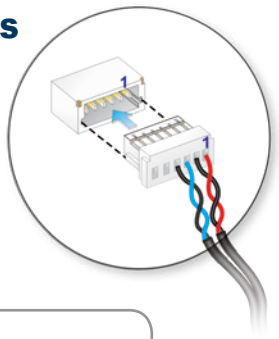


Applications for Logistics Schematic Diagram

Abundant Trigger Connection Ports

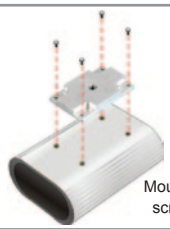
■ Support up to 2 Trigger Connection Ports

Group	Pin	Description
1	1	Output of LED Flash Trigger
	2	Ground for the Output LED Flash Trigger
2	3	Input of Interrupt Trigger
	4	Ground for the Input of Interrupt Trigger

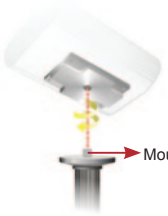


■ Mounting Way

Mounting bracket size (50x31x8 mm)



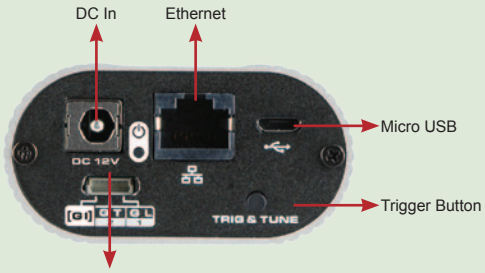
Mounting bracket screw size: M2



Fully Integrated I/O

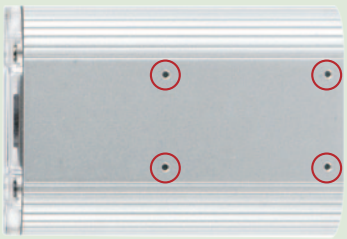
■ Front View

■ Rear View

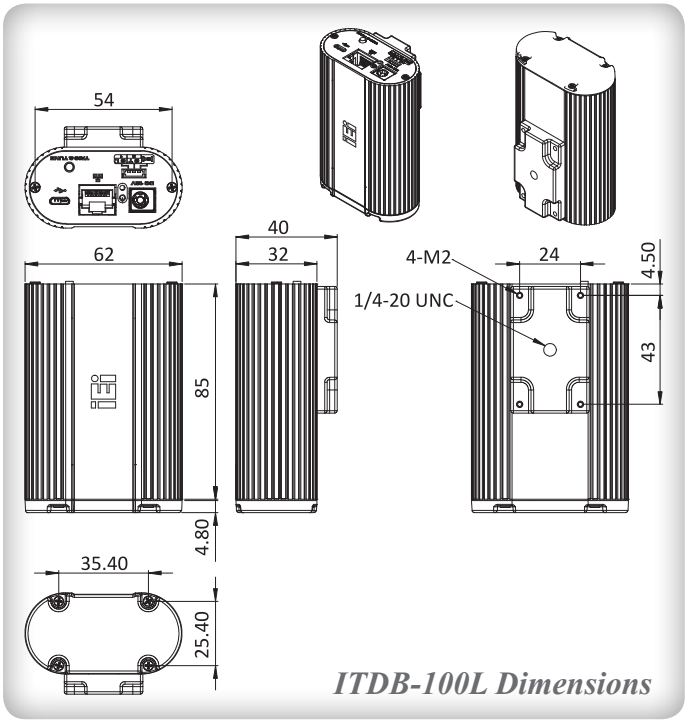


■ Bottom View

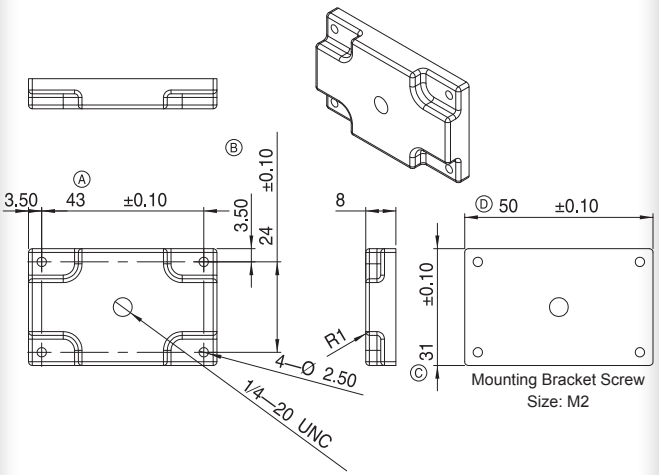
The bottom surface of the ITDB-100L contains four retention screw holes for the mounting bracket.



Dimensions (Unit: mm)



ITDB-100L Dimensions



Mounting Bracket Dimensions

Specifications

Supported 1D Symbologies	Code 39, code 93, interleaved 2 of 5, UPC/EAN (ISBN, UPCA, UPCE, EAN13, EAN8) EAN 128, code 128, MSI, codabar
Supported 2D Symbologies	PDF-417, Micro PDF-417, QR Code/microQR Code, Data Matrix
Sensor Major Specifications	Sensor: 1/3 inch CMOS with global shutter Resolution: 752 x 480 Acquisition: Max. rate 60fps
Lens Major Specifications	Focus: Fixed Code resolution: ≥0.33 mm Reading distance (at code resolution): 50 mm ~ 330 mm
Illumination Element (nm)	2 x Red LEDs Visible red light (λ= 650 nm ~ 660 nm)
I/O Interfaces	1 x Micro USB port (USB 2.0 data transmission rate: 480 Mbit/s) 1 x Ethernet port (Ethernet data transmission rate: 10/100 Mbit/s) 1 x DC in jack (Φ2.5/Φ5.5) 1 x 6-pin connector for trigger connection 1 x Trigger and tuning control button 1 x power indicator Acoustic indicators: Beeper
Power Supply	Operating voltage: 12V/3.3A Power consumption: Power on = 7.7 W Max. PD = 9.9 W

Operating Limits of the 6-pin Connector for Trigger Connection	**Output of LED Flash Trigger** Current: 8mA Voltage: 3.3VDC **Input of Interrupt Trigger** Current: 1.4mA@5VDC, 4mA@12VDC, 6.2mA@18VDC Recommended operating voltage: 5VDC ~ 18VDC Absolute voltage limits: 4.5VDC ~ 24VDC
Supported OS	Microsoft® Windows® XP 32-bit & 64-bit Microsoft® Windows® Vista 32-bit & 64-bit Microsoft® Windows® 7 32-bit & 64-bit
Mechanical Specifications	Housing: Die-casting aluminum Housing color: Silver Front cover: Transparent plastic Weight: 290 g (without mounting bracket) Dimensions (LxWxH): 89.8 mm x 62 mm x 32 mm
Environment	RoHS compliant Operating temperature: 0°C ~ 50°C Storage temperature: -10°C ~ 60°C Permissible relative humidity: 90% (non-condensing) Ambient light safety: 2,000 lx, on code
Shock Resistance	EN 60068-2-27 (2009-05)
Vibration	MIL-STD-810F 514.5C-1 and IEC-60068-2-06

Packing List

Item	Part No.	Q'ty
ITDB-100L	ITDB-100L-R10	1
Power Adapter	63000-FSP040DGAA1106-RS	1
Power Cord (US)	32701-000700-100-RS	1
Power Cord (EU)	32702-000200-100-RS	1
Micro USB Cable	32001-016100-100-RS	1
Ethernet Cable	32000-113100-RS	1
Mounting Bracket	42010-0172E4-00-RS-N	1
Mounting Bracket Screw	44045-020061-RS	4
Trigger Connection Cable	32125-008200-100-RS	1
User Manual and Utility CD	7B000-000966-RS	1

Power Adapter

Power Cord (US)

Power Cord (EU)

Micro USB Cable

Ethernet Cable

Mounting Bracket

Mounting Bracket Screw

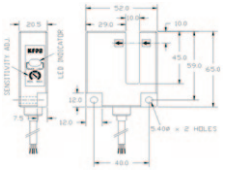
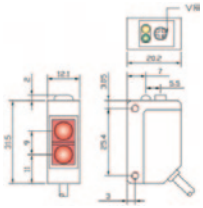
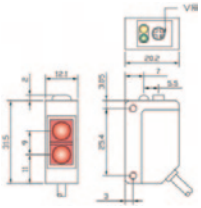
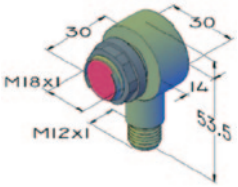
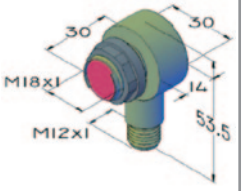
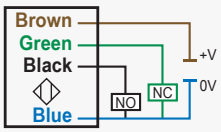
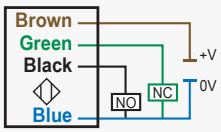
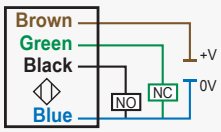
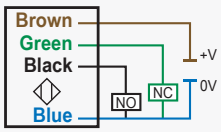
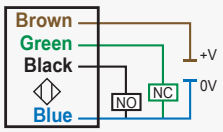
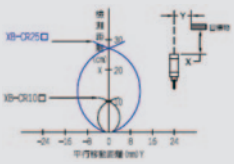
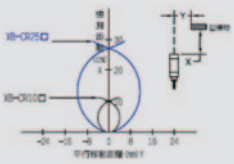
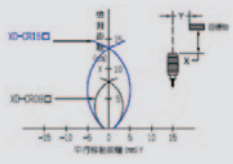
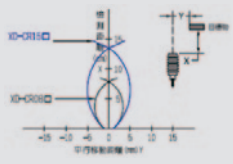
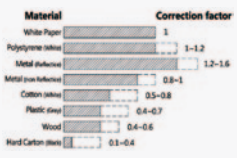
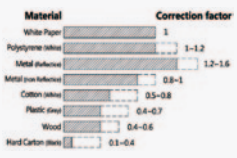
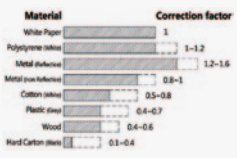
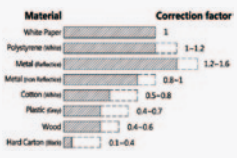
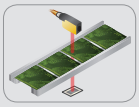
Trigger Connection Cable

User Manual CD

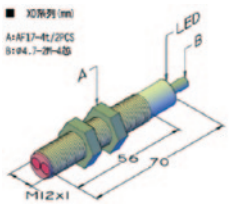
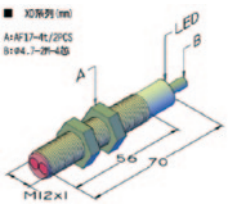
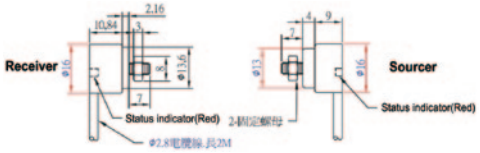
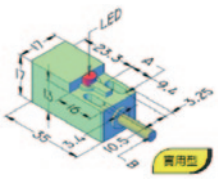
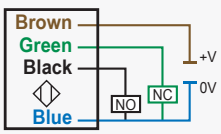
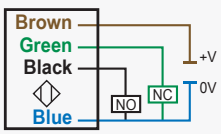
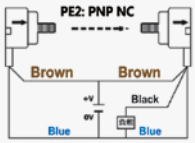
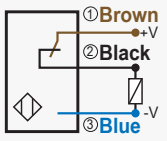
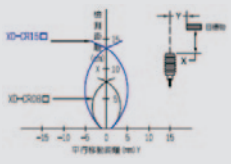
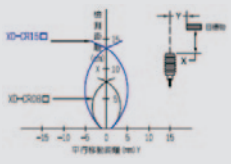
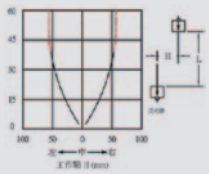
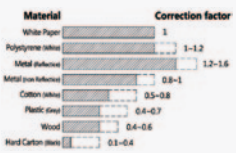
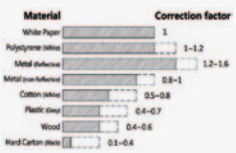
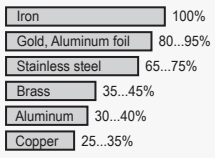
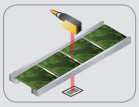
Order Information

Part No.	Description
ITDB-100L-R10	Image-based code reader system with 1D, 2D decoding code types, 752x480, 2 x LEDs, Reading distance (at code resolution): 50mm ~ 330mm, 12V DC Input, RoHS, I/O interface with 1 x USB 2.0, 1 x DC jack (Φ2.5xΦ6.3), 1 x ethernet, 1x6-pin trigger port, 1 x trigger button
ITDB-100HD-R10	Image-based code reader system with 1D, 2D decoding code types, 752x480, 2 x LEDs, Reading distance (at code resolution): 20mm ~ 60mm, 12V DC Input, RoHS, I/O interface with 1 x USB 2.0, 1 x DC jack (Φ2.5xΦ6.3), 1 x ethernet, 1x6-pin trigger port, 1 x trigger button

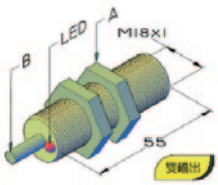
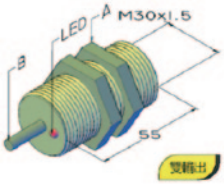
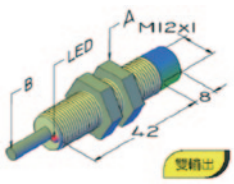
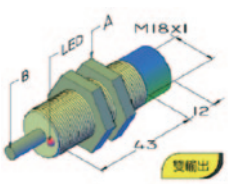
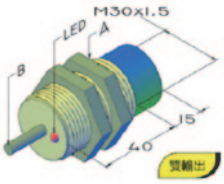
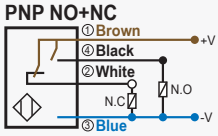
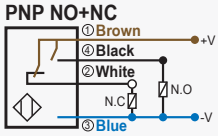
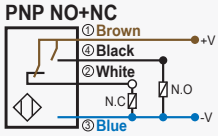
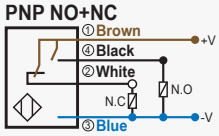
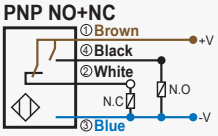
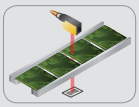
Trigger Sensor Selection Guide

	Photoelectric Sensor				
Industrial Trigger Sensors	7L001-KPER01P-RS	7L001-XBCR10P-RS	7L001-XBCR25P-RS	7L001-XCCR12PV-RS	7L001-XCCR40PV-RS
					
Sensing Range Max.	10mm	10cm	25cm	12cm	40cm
Sensor/Detection Principle	Fork sensor	retro-reflective sensor	retro-reflective sensor	retro-reflective sensor	retro-reflective sensor
Output Type	PNP NO&NC	PNP NO&NC	PNP NO&NC	PNP NO&NC	PNP NO&NC
Supply Voltage	DC 12~24V, ripple≤10%	DC 12~24V, ripple≤10%	DC 12~24V, ripple≤10%	DC 12~24V, ripple≤10%	DC 12~24V, ripple≤10%
Power Consumption	<100mA	<100mA	<100mA	<150mA	<150mA
Response Time	<5ms	<5ms	<5ms	<5ms	<5ms
Status Indicator	Red LED	Yelllow LED	Yelllow LED	Orange LED	Orange LED
Circuit Protection	output reverse-polarity protected	output reverse-polarity and and short-circuit protected	output reverse-polarity and and short-circuit protected	output reverse-polarity and and short-circuit protected	output reverse-polarity and and short-circuit protected
Light Source	Visible red light	Infrared LED	Infrared LED	Infrared LED	Infrared LED
Enclosure Rating	IEC IP62	IEC IP65	IEC IP65	IEC IP65	IEC IP65
Connection Type	2M PVC cable	2M PVC cable	2M PVC cable	M12	M12
Connection Diagram					
Sensing Range Diagram	N/A				
Characteristic Diagram	N/A				
Ambient Operating Temperature/Humidity	-20 ~ 55°C (no icing) / RH 35 ~ 85%	-20 ~ 55°C (no icing) / RH 35 ~ 85%	-20 ~ 55°C (no icing) / RH 35 ~ 85%	-20 ~ 55°C (no icing) / RH 35 ~ 85%	-20 ~ 55°C (no icing) / RH 35 ~ 85%
Ambient Llight	indoor < 3000 Lux / outdoor < 10000 Lux	indoor < 3000 Lux / outdoor < 10000 Lux	indoor < 3000 Lux / outdoor < 10000 Lux	indoor < 3000 Lux / outdoor < 10000 Lux	indoor < 3000 Lux / outdoor < 10000 Lux
Connection Cable	PVC	PVC	PVC	7L002-UV504P2M-RS	7L002-UV504P2M-RS
Housing Material	ABS/PC, Plastic	ABS/PC, Plastic	ABS/PC, Plastic	ABS/PC, Plastic	ABS/PC, Plastic
Recommand					
Metal Position Detecting					
Normal Object Detecting 		✔	✔	✔	✔
Labeling Process Detecting	✔				

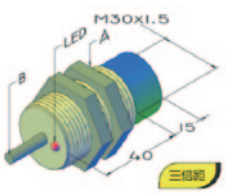
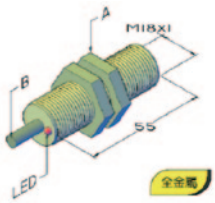
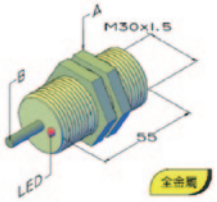
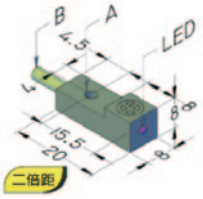
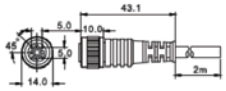
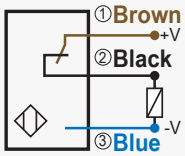
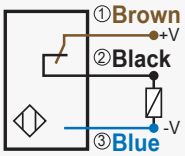
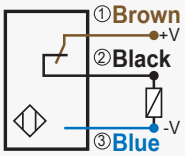
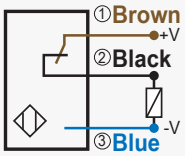
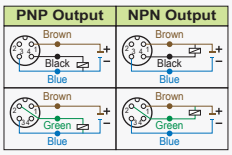
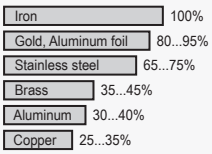
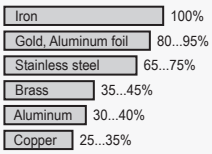
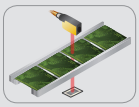
Trigger Sensor Selection Guide

	Photoelectric Sensor			Proximity Sensor
Industrial Trigger Sensors	7L001-XDCR08P-RS	7L001-XDCR15P-RS	7L001-XGSP30PE2-RS	7L003-TLE5PE2-RS
				
Sensing Range Max.	8cm	15cm	30cm	5mm
Sensor/Detection Principle	retro-reflective sensor	retro-reflective sensor	Through-beam sensor	N/A
Output Type	PNP NO&NC	PNP NO&NC	PNP NC	PNP NC
Supply Voltage	DC 12~24V, ripple≤10%	DC 12~24V, ripple≤10%	DC 12~24V, ripple≤10%	DC 12~24V, ripple≤10%
Power Consumption	<100mA	<100mA	<100mA	<100mA
Response Time	<5ms	<5ms	<5ms	600Hz
Status Indicator	Yelllow LED	Yelllow LED	Red LED	Red LED
Circuit Protection	short-circuit protected	short-circuit protected	output reverse-polarity protected	output reverse-polarity and and short-circuit protected
Light Source	Infrared LED	Infrared LED	Infrared LED	N/A
Enclosure Rating	IEC IP65	IEC IP65	IEC IP67	IEC IP67
Connection Type	2M PVC cable	2M PVC cable	2M PVC cable	2M PVC cable
Connection Diagram				
Sensing Range Diagram				N/A
Characteristic Diagram			N/A	
Ambient Operating Temperature/Humidity	-20 ~ 55°C (no icing) / RH 35 ~ 85%	-20 ~ 55°C (no icing) / RH 35 ~ 85%	-20 ~ 55°C (no icing) / RH 35 ~ 85%	-20 ~ 70°C (no icing) / RH 35 ~ 85%
Ambient Llight	indoor < 3000 Lux / outdoor < 10000 Lux	indoor < 3000 Lux / outdoor < 10000 Lux	indoor < 3000 Lux / outdoor < 10000 Lux	N/A
Connection Cable	PVC	PVC	PVC	PVC
Housing Material	Nickel-plated brass and PC, Metal	Nickel-plated brass and PC, Metal	Nickel-plated brass and PC, Metal	PBT
Recommand				
Metal Position Detecting				✔
Normal Object Detecting 	✔	✔	✔	
Labeling Process Detecting				

Trigger Sensor Selection Guide

	Proximity Sensor				
Industrial Trigger Sensors	7L003-XLF18P05E3-RS 	7L003-XLF30P10E3-RS 	7L003-XLN12P04E3-RS 	7L003-XLN18P08E3-RS 	7L003-XLN30P15E3-RS 
Sensing Range Max.	5mm	10mm	4mm	8mm	15mm
Sensor/Detection Principle	N/A	N/A	N/A	N/A	N/A
Output Type	PNP NO&NC	PNP NO&NC	PNP NO&NC	PNP NO&NC	PNP NO&NC
Supply Voltage	DC 12~24V, ripple≤10%	DC 12~24V, ripple≤10%	DC 12~24V, ripple≤10%	DC 12~24V, ripple≤10%	DC 12~24V, ripple≤10%
Power Consumption	<200mA	<200mA	<200mA	<200mA	<200mA
Response Time	500Hz	350Hz	500Hz	250Hz	250Hz
Status Indicator	Yelllow LED	Yelllow LED	Yelllow LED	Yelllow LED	Yelllow LED
Circuit Protection	output reverse-polarity and and short-circuit protected	output reverse-polarity and and short-circuit protected	output reverse-polarity and and short-circuit protected	output reverse-polarity and and short-circuit protected	output reverse-polarity and and short-circuit protected
Light Source	N/A	N/A	N/A	N/A	N/A
Enclosure Rating	IEC IP67	IEC IP67	IEC IP67	IEC IP67	IEC IP67
Connection Type	2M PVC cable	2M PVC cable	2M PVC cable	2M PVC cable	2M PVC cable
Connection Diagram	PNP NO+NC 	PNP NO+NC 	PNP NO+NC 	PNP NO+NC 	PNP NO+NC 
Sensing Range Diagram	N/A	N/A	N/A	N/A	N/A
Characteristic Diagram	Iron 100% Gold, Aluminum foil 80...95% Stainless steel 65...75% Brass 35...45% Aluminum 30...40% Copper 25...35%	Iron 100% Gold, Aluminum foil 80...95% Stainless steel 65...75% Brass 35...45% Aluminum 30...40% Copper 25...35%	Iron 100% Gold, Aluminum foil 80...95% Stainless steel 65...75% Brass 35...45% Aluminum 30...40% Copper 25...35%	Iron 100% Gold, Aluminum foil 80...95% Stainless steel 65...75% Brass 35...45% Aluminum 30...40% Copper 25...35%	Iron 100% Gold, Aluminum foil 80...95% Stainless steel 65...75% Brass 35...45% Aluminum 30...40% Copper 25...35%
Ambient Operating Temperature/Humidity	-20 ~ 70°C (no icing) / RH 35 ~ 85%	-20 ~ 70°C (no icing) / RH 35 ~ 85%	-20 ~ 70°C (no icing) / RH 35 ~ 85%	-20 ~ 70°C (no icing) / RH 35 ~ 85%	-20 ~ 70°C (no icing) / RH 35 ~ 85%
Ambient Llight	N/A	N/A	N/A	N/A	N/A
Connection Cable	PVC	PVC	PVC	PVC	PVC
Housing Material	Nickel-plated brass	Nickel-plated brass	Nickel-plated brass	Nickel-plated brass	Nickel-plated brass
Recommand					
Metal Position Detecting	✔	✔	✔	✔	✔
Normal Object Detecting 					
Labeling Process Detecting					

Trigger Sensor Selection Guide

	Proximity Sensor				Photoelectric Sensor Cable
	7L003-XLN30P40E2-RS	7L003-XN2F18P05E2-RS	7L003-XN2F30P10E2-RS	7L003-XSN08PS25E2-RS	7L002-UV504P2M-RS
Industrial Trigger Sensors					
Sensing Range Max.	40mm	5mm	10mm	2.5mm	N/A
Sensor/Detection Principle	N/A	N/A	N/A	N/A	N/A
Output Type	PNP NC	PNP NC	PNP NC	PNP NC	N/A
Supply Voltage	DC 12~24V, ripple≤10%	DC 12~24V, ripple≤10%	DC 12~24V, ripple≤10%	DC 12~24V, ripple≤10%	250VAC/DC
Power Consumption	<200mA	<200mA	<200mA	<100mA	≤3A
Response Time	50Hz	500Hz	250Hz	500Hz	N/A
Status Indicator	Yelllow LED	Yelllow LED	Yelllow LED	Yelllow LED	N/A
Circuit Protection	output reverse-polarity and and short-circuit protected	output reverse-polarity and and short-circuit protected	output reverse-polarity and and short-circuit protected	output reverse-polarity and and short-circuit protected	N/A
Light Source	N/A	N/A	N/A	N/A	N/A
Enclosure Rating	IEC IP67	IEC IP67	IEC IP67	IEC IP67	IEC IP67
Connection Type	2M PVC cable	2M PVC cable	2M PVC cable	2M PVC cable	2M PVC cable
Connection Diagram					
Sensing Range Diagram	N/A	N/A	N/A	N/A	N/A
Characteristic Diagram		N/A	N/A		N/A
Ambient Operating Temperature/Humidity	-20 ~ 70°C (no icing) / RH 35 ~ 85%	-20 ~ 70°C (no icing) / RH 35 ~ 85%	-20 ~ 70°C (no icing) / RH 35 ~ 85%	-20 ~ 70°C (no icing) / RH 35 ~ 85%	-25 ~ 80°C (no icing) / RH 35 ~ 85%
Ambient Llight	N/A	N/A	N/A	N/A	N/A
Connection Cable	PVC	PVC	PVC	PVC	PVC
Housing Material	Nickel-plated brass	stainless steel	stainless steel	PBT	N/A
Recommand					
Metal Position Detecting	✔	✔	✔	✔	
Normal Object Detecting 					
Labeling Process Detecting					